

# Ch. 2.2 Seafloor Spreading

***Objective:*** Discuss seafloor spreading and relate why its discovery added to the thought that the continents were moving.



# Seafloor Spreading

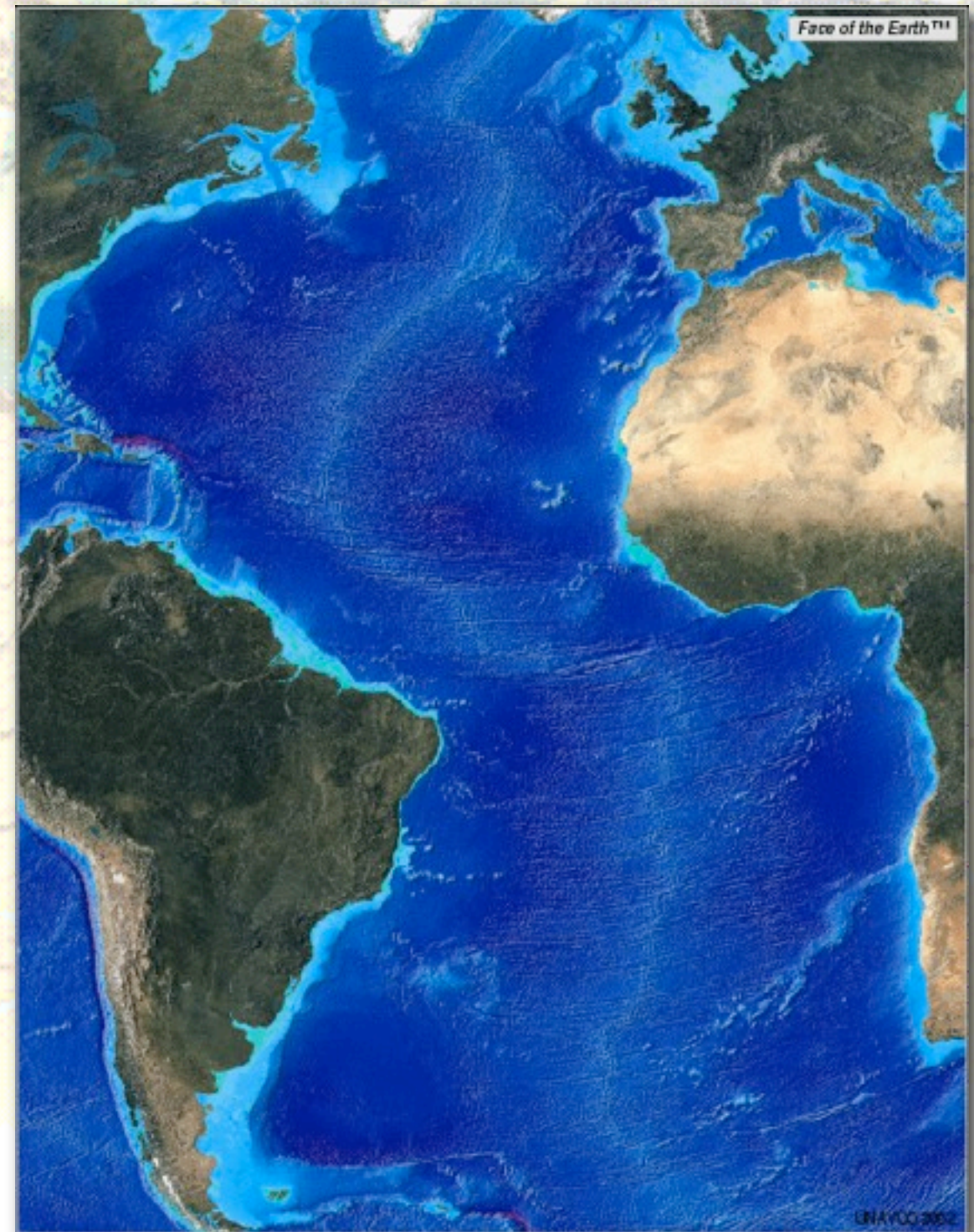
## Mid-Atlantic Ridge

- Mapped in 1947
- An undersea mountain range with a steep, narrow valley running down the center
- Ocean floor was young compared to the age of continental rocks
  - Oceanic rocks: younger than 175 million years old
  - Continental rocks: about 4 billion years old



# Seafloor Spreading

## Mid-Atlantic Ridge

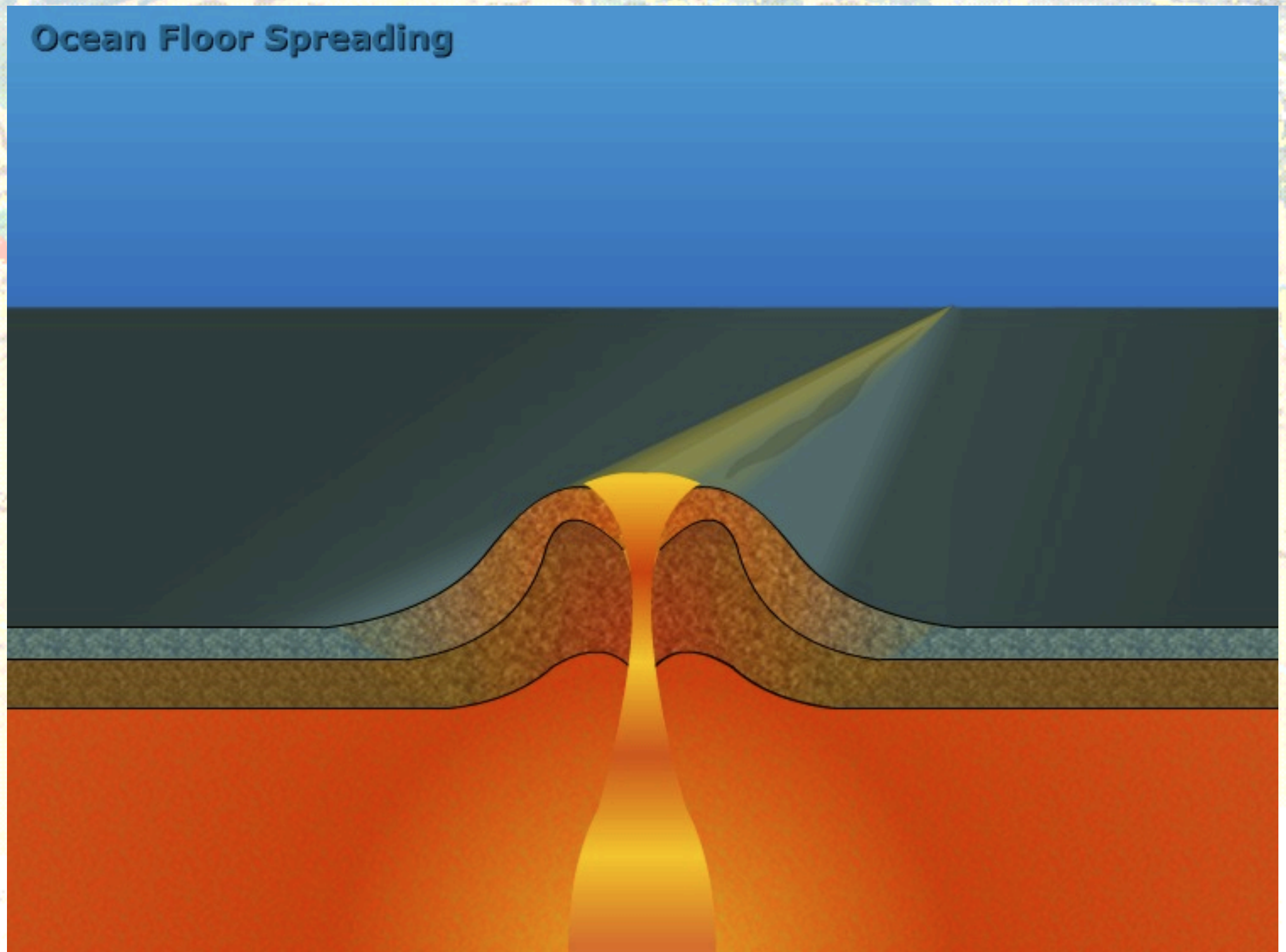




# Mid- Atlantic Ridge

[Flash  
Presentation](#)

Ocean Floor Spreading



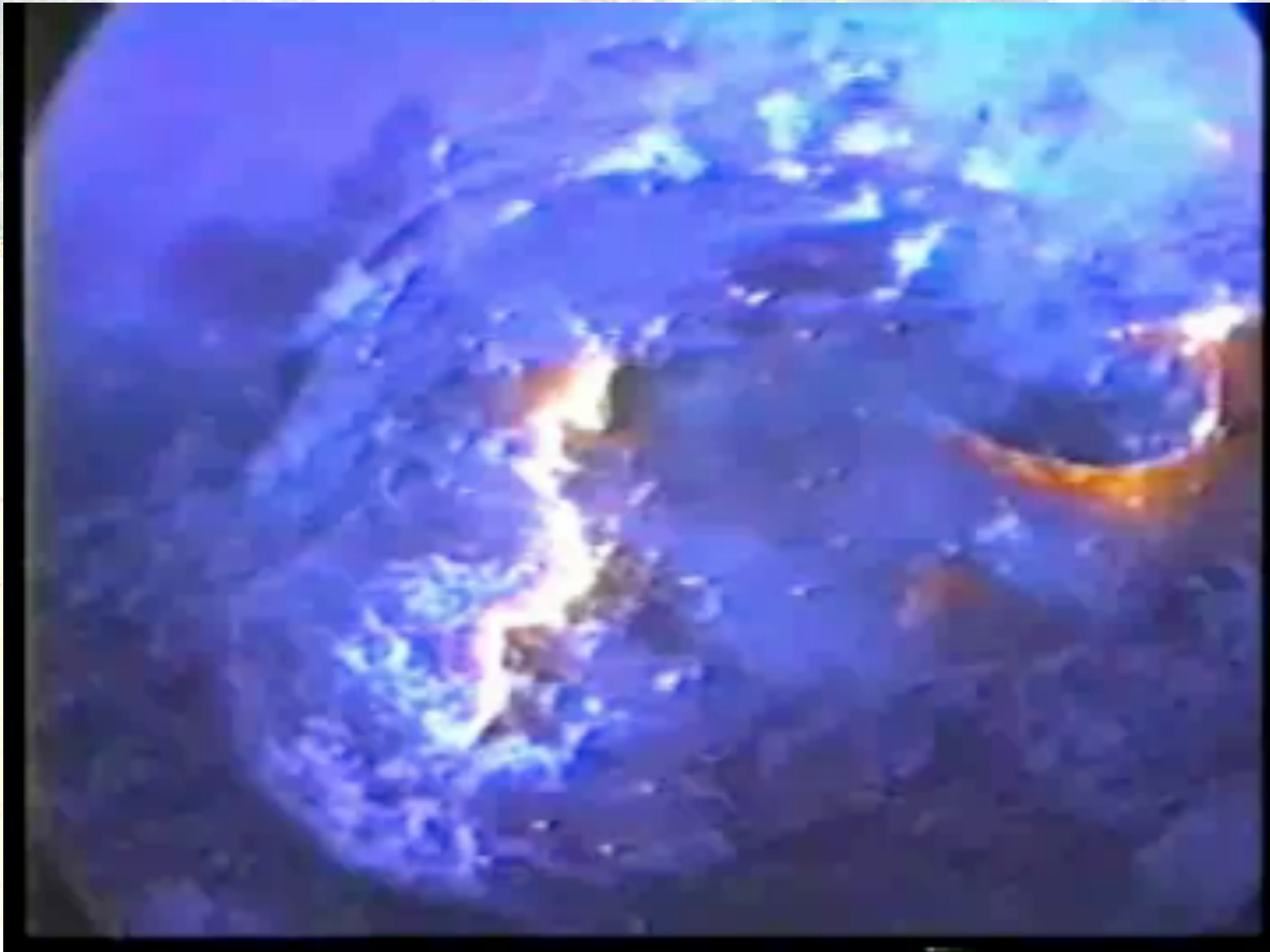


# The Renewal of the Ocean

- a. Developed by Hess
- b. The idea that the valley along the top of the Mid-Atlantic Ridge was actually a break in the earth's crust where magma welled up through
- c. This happened because the ocean floor was moving away from both sides of the break (ridge)
- b. The open area was replaced by the magma that cooled and solidified into new rock
- c. Thus, the continents might also be moving



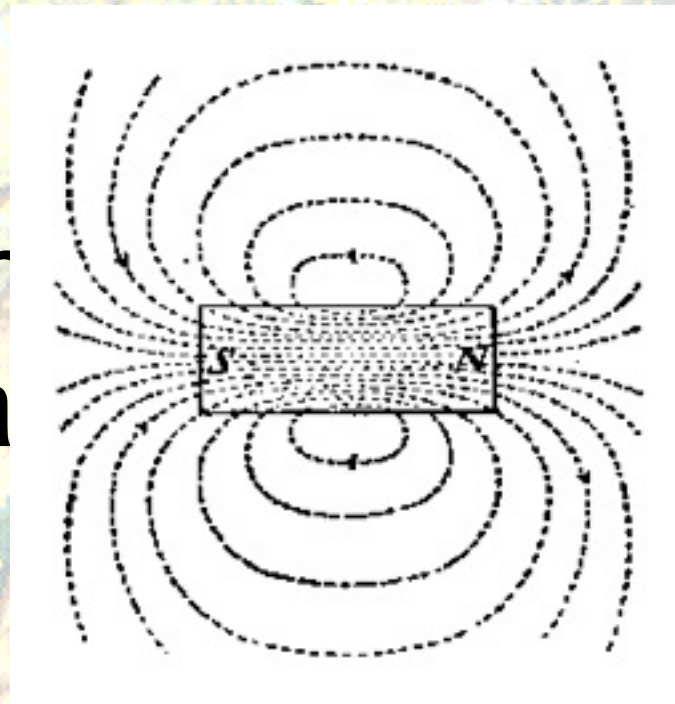
# Pillow Basalts





# Paleomagnetism of the Ocean Floor

- The earth acts like a giant magnet, with both north and south pole.
- When rock harden, the magnetic orientation of the minerals becomes permanent and points to the north.
- Scientists have been finding rocks with a magnetic orientation that points south.





# Paleomagnetism of the Ocean Floor

- Scientist concluded that the earth's magnetic field has reversed.
- They found that all rocks with a south magnetic field fell into similar time periods.
- Scientist have discovered that throughout history, the earths magnetic pole has reversed.



# Magnetic Polarity

